

Major Coastal Storm for Late Sunday into Monday

Decision Support Briefing #2

As of: 530 AM Dec 16, 2023

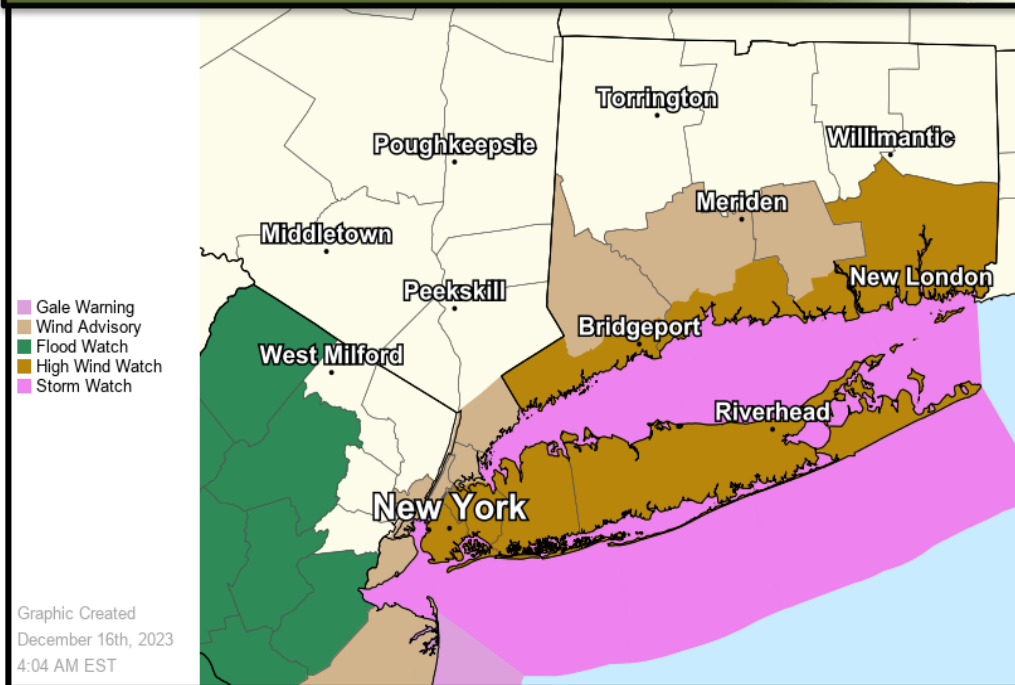
What Has Changed?

- ✓ High Wind Watch issued for Brooklyn, Queens, Long Island, coastal Connecticut and New London County.
- ✓ Wind Advisory issued for Manhattan, Staten Island, the Bronx, southern Westchester, and most of interior southern Connecticut.
- ✓ Storm Watch issued for all coastal waters.

Key Messages

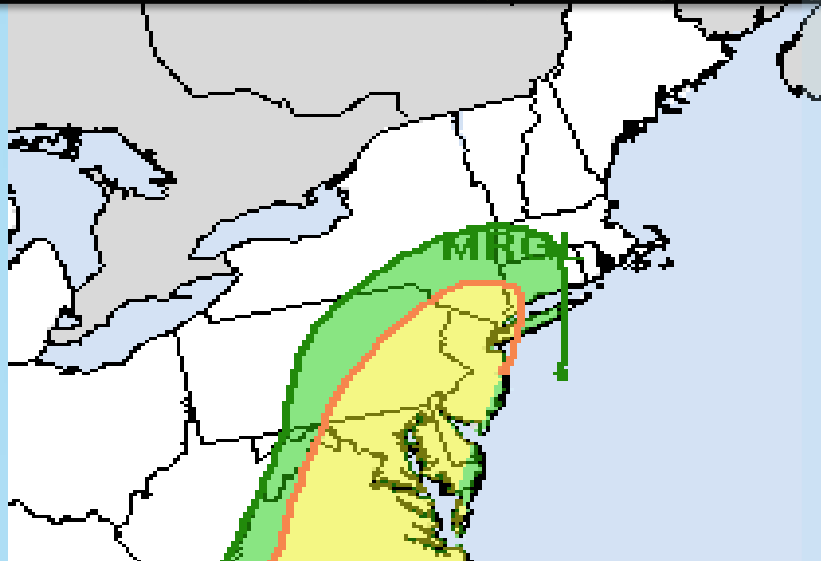
- ✓ Widespread minor urban, poor drainage and riverine flood threats likely for late Sunday thru Monday morning.
- ✓ Threat for minor to moderate flooding of quick responding rivers. Moderate to major possible for a few spots.
- ✓ Widespread minor to moderate coastal flooding likely for Monday afternoon high tide. Locally major possible.
- ✓ Scattered overwashes possible for the ocean beachfront.
- ✓ Strong winds for the coast Sunday Night into Monday.
- ✓ Storm conditions likely on all waters Sunday Night through Monday.

Current Hazards



Heavy Rain and Flash Flood Potential

Excessive Rainfall Outlook for Sunday/Sunday Night



Hazards:

- ✓ **Storm Total Rainfall:** Entire Area
 - ✓ 2 to 3" likely, locally higher possible
 - ✓ Highest amounts favored across the interior
 - ✓ Much of this will fall over 12 hours
- ✓ **Rainfall Rates:**
 - ✓ Generally $\frac{1}{4}$ to $\frac{1}{2}$ "/hr. Prob of 1"/hr rates is low and localized.

Impacts:

- ✓ **Widespread minor urban and poor drainage flooding likely. Localized to scattered flash flooding possible.** This may cause some disruptions to transportation, and isolated flooding of basements, first floors of residences and businesses, as well as some underground infrastructures.
- ✓ **Minor to moderate flooding likely along several quick responding small rivers and streams of NE NJ and Lower Hudson Valley.**
Reasonable worst case scenario of moderate to major flooding for a few quick responding rivers, particularly in NE NJ if greater than 3" of rainfall is realized.
- ✓ **Significant rises expected along large stem rivers** with minor flooding possible across a few areas river Monday into Tuesday.
- ✓ **Heavy rainfall and runoff may coincide with times of high tide Sunday overnight and early Monday afternoon, exacerbating flood impacts along the coast and tidally affected river basins.**

Timing:

- ✓ Heaviest rainfall and impacts Sunday Evening thru Monday morning

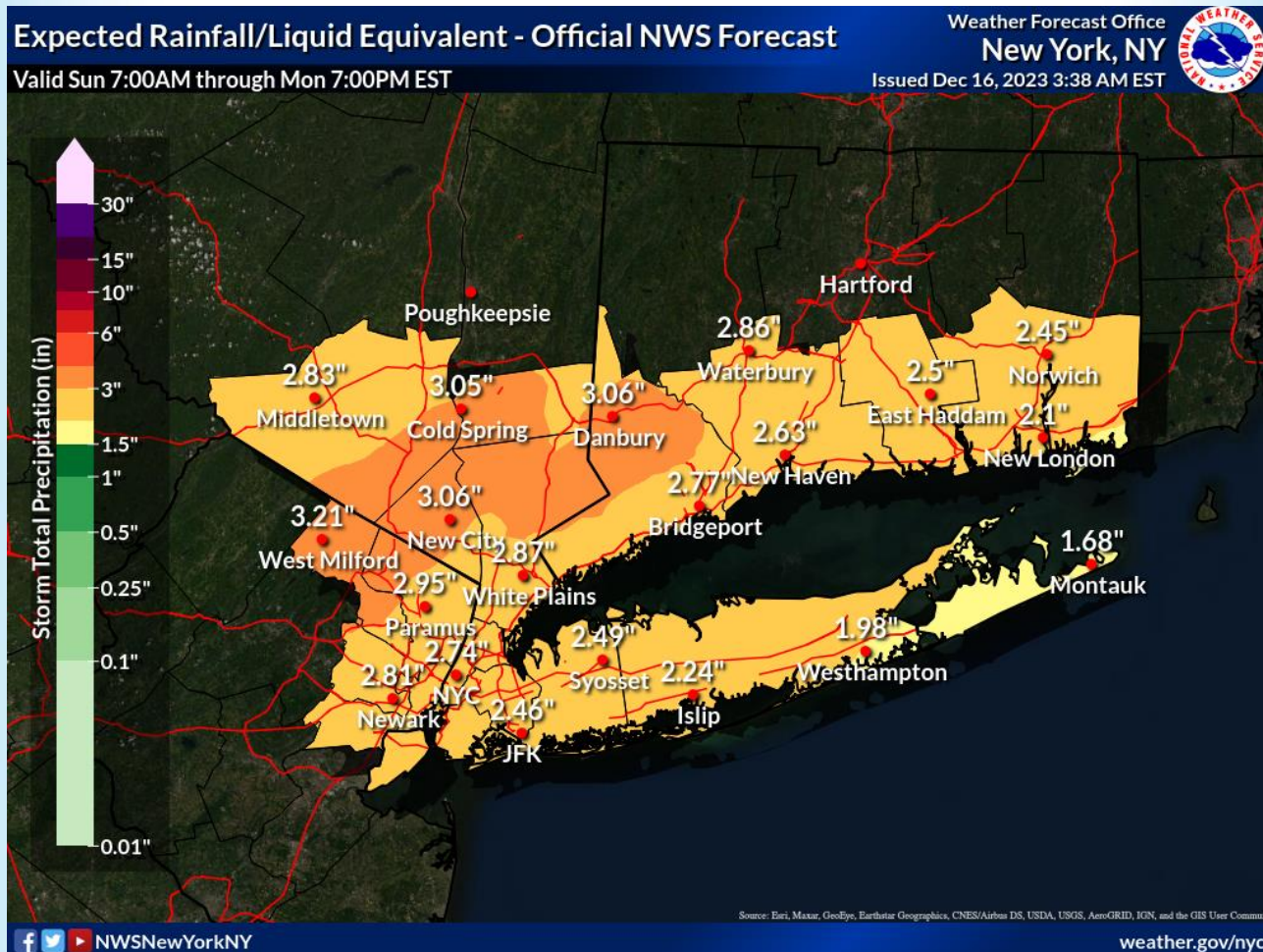
Forecast Challenges:

- ✓ Streamflows are generally running around the 75th percentile, with slightly above normal soil moisture increasing the threat for flood impacts.
- ✓ Peak storm total rainfall and rainfall rate information will be better resolved in the next 24 hours as the storm becomes resolved by high res models

Understanding WPC Excessive Rainfall Risk Categories

No Area/Label	MARGINAL (MRGL)	SLIGHT (SLGT)	MODERATE (MDT)	HIGH (HIGH)
Flash floods are generally not expected.	Isolated flash floods possible	Scattered flash floods possible	Numerous flash floods likely	Widespread flash floods expected
	Localized and primarily affecting places that can experience rapid runoff with heavy rainfall.	Mainly localized. Most vulnerable are urban areas, roads, small streams and washes. Isolated significant flash floods possible.	Numerous flash flooding events with significant events possible. Many streams may flood, potentially affecting larger rivers.	Severe, widespread flash flooding. Areas that don't normally experience flash flooding, could. Lives and property in greater danger.
www.wpc.ncep.noaa.gov @NWSWPC				
Flash flooding near me?	Flash Flooding	Flash Flooding	Flash Flooding	Flash Flooding
NO Flash Flooding				
WEATHER PREDICTION CENTER				

Official Rainfall Forecast



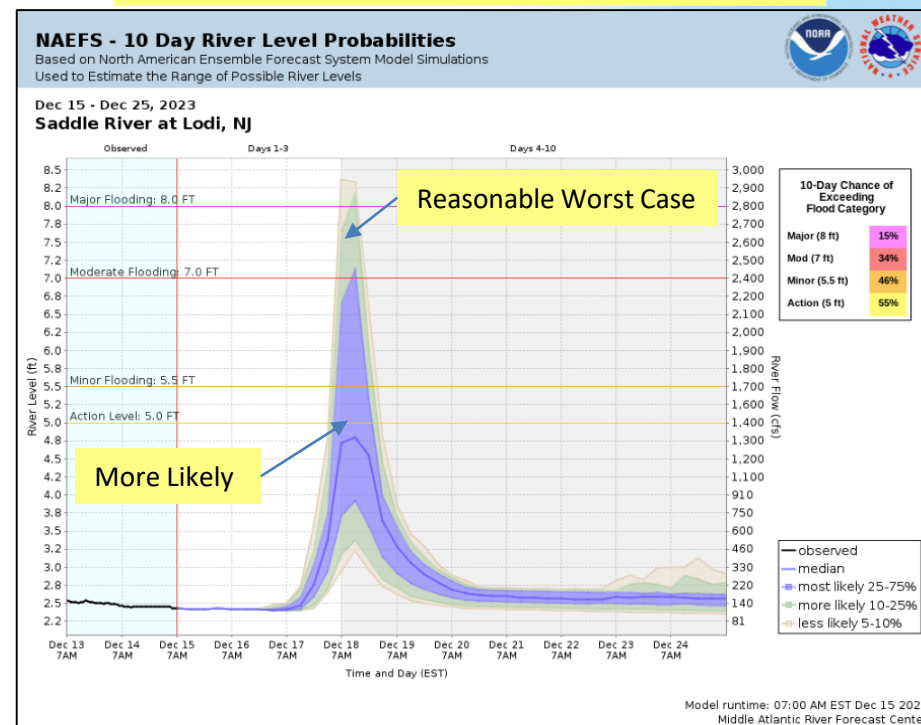
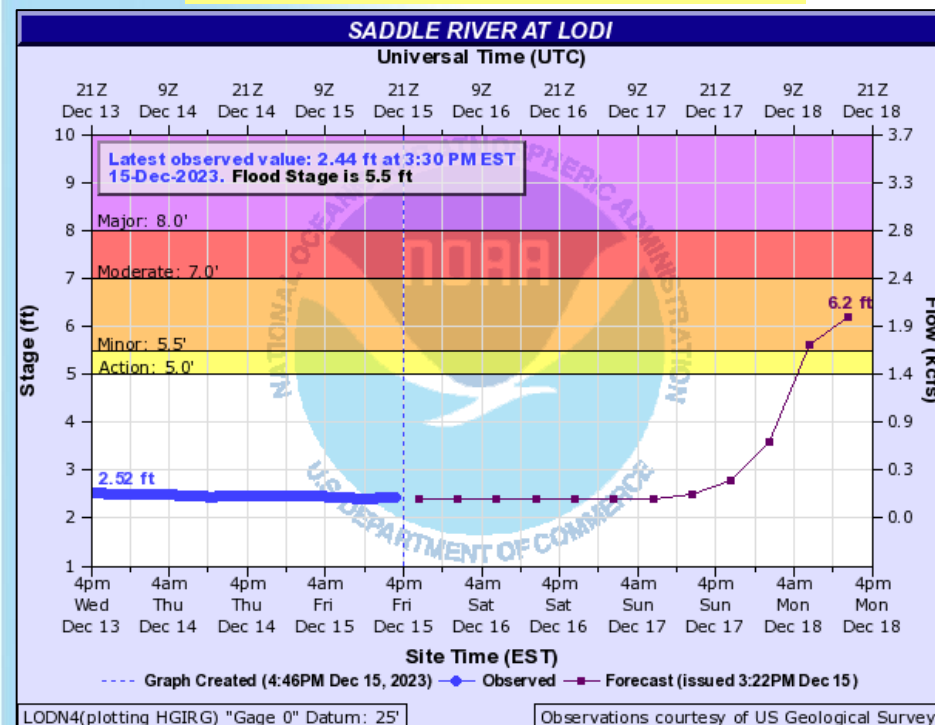
Northeastern NJ River Flooding Potential

- ✓ **Minor to moderate flooding likely along several quick responding small rivers and streams of NE NJ.**
- ✓ Reasonable worst case scenario of moderate to major flooding for a few quick response rivers, if greater than 3" of rainfall is realized.

For more details...See here for the latest [river forecasts](#), impact catalogs, and [inundation maps](#).

Official Forecast – Saddle River at Lodi

Probabilistic Forecast -- Saddle River at Lodi

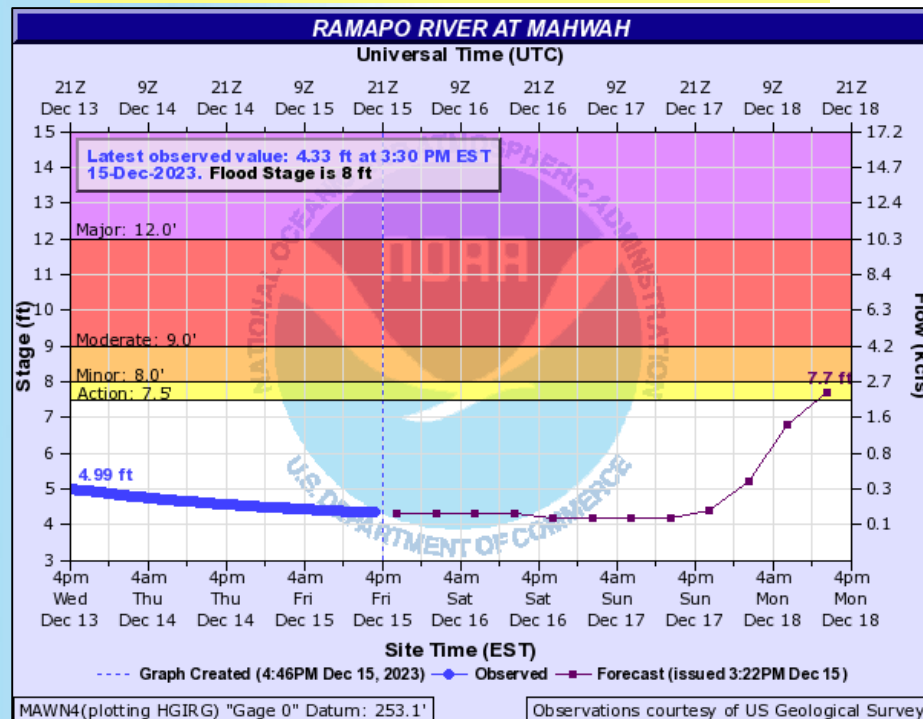


Northeastern NJ River Flooding Potential

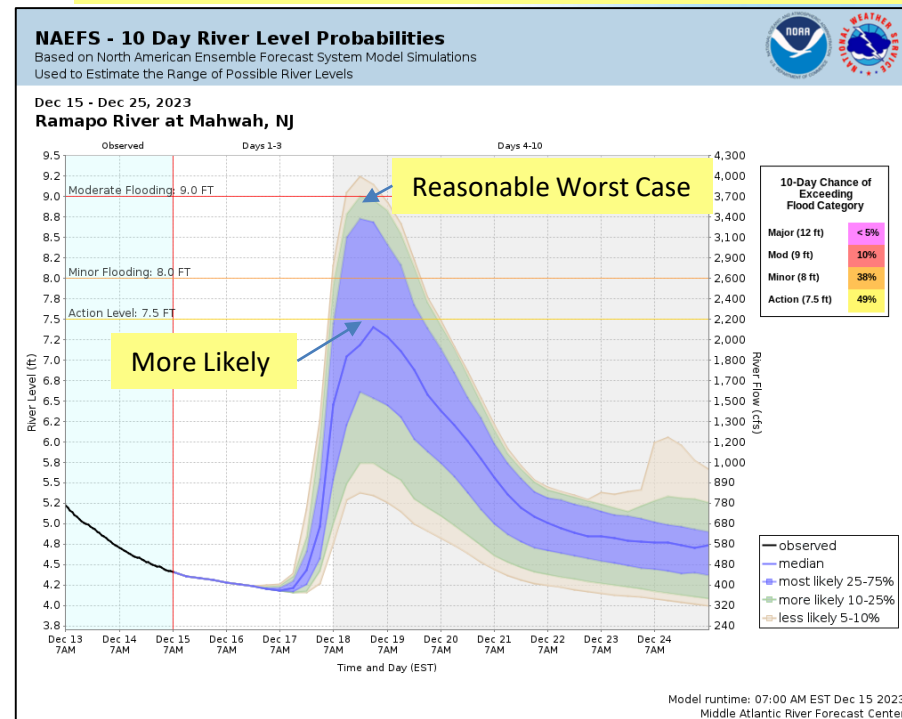
- ✓ **Minor to moderate flooding likely along several quick responding small rivers and streams of NE NJ.**
- ✓ Reasonable worst case scenario of moderate to major flooding for a few quick response rivers, if greater than 3" of rainfall is realized.

For more details...See here for the latest [river forecasts](#), impact catalogs, and [inundation maps](#).

Official Forecast – Ramapo River at Mahwah NJ



Probabilistic Forecast - Ramapo River at Mahwah NJ

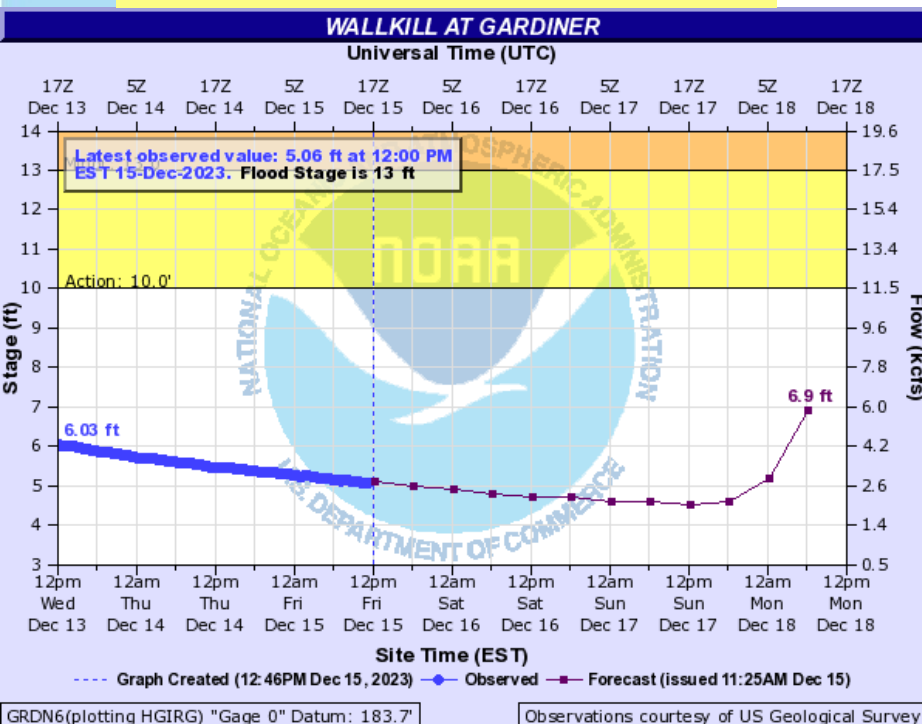


Lower Hudson Valley River Flooding Potential

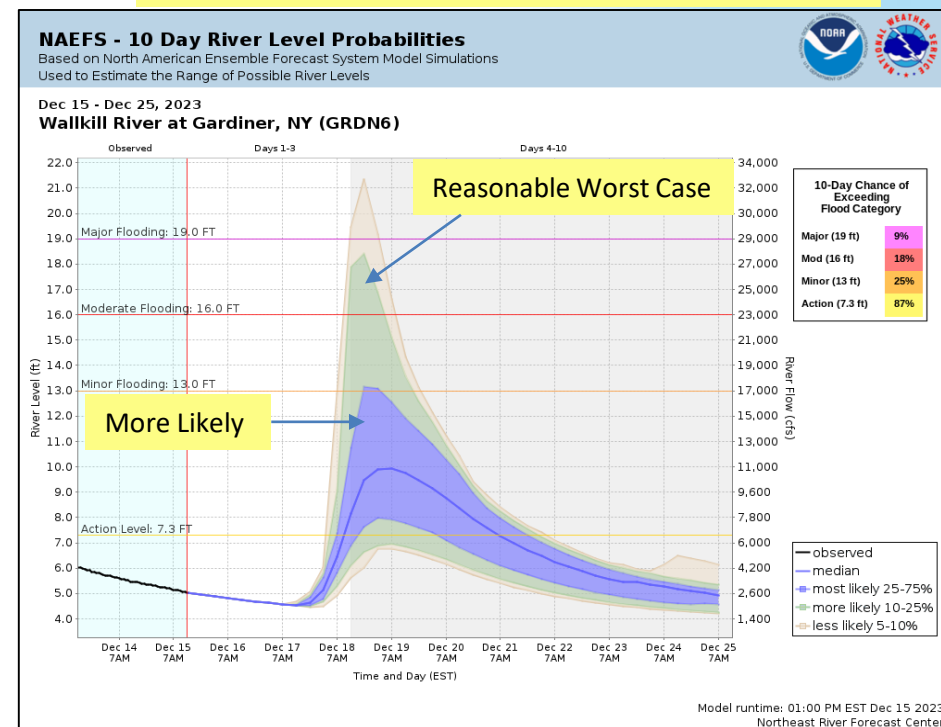
- ✓ Minor flooding likely along a few quick responding small rivers and streams, particularly Westchester County.
- ✓ **Reasonable worst case scenario of moderate flooding for a few quick response rivers, if greater than 3-4" of rainfall is realized.**

For more details...See here for the latest [river forecasts](#) and impact catalogs.

Official Forecast – Wallkill at Gardiner NY



Probabilistic Forecast – Wallkill at Gardiner NY

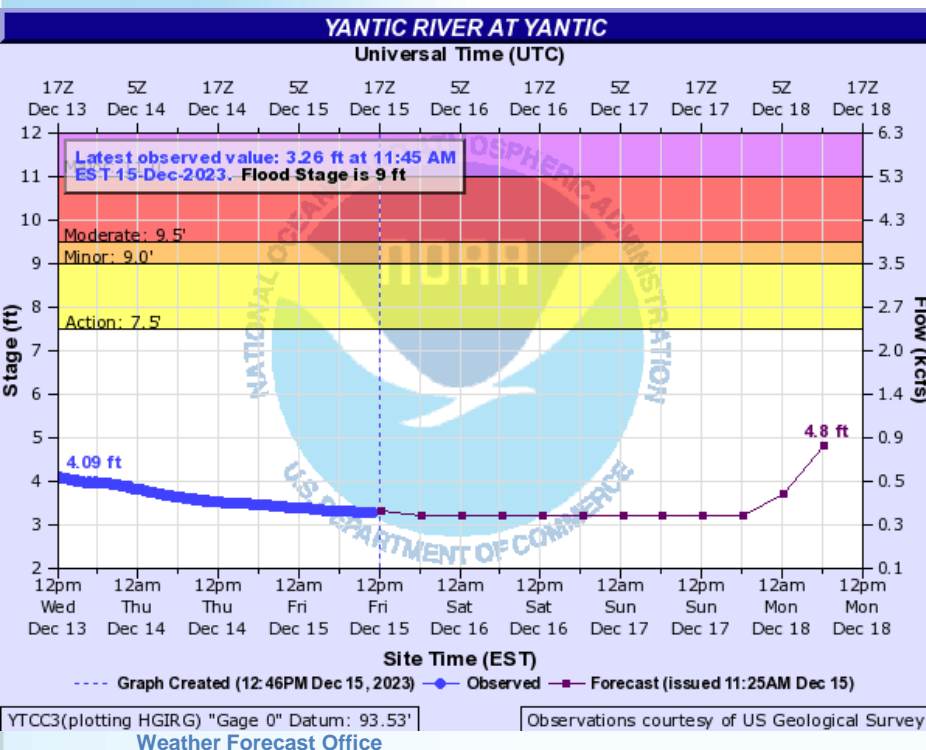


Southern CT River Flooding Potential

- ✓ Minor flooding likely along a few quick responding small rivers and streams, particularly southwestern CT.
- ✓ **Reasonable worst case scenario of moderate flooding for a few quick response rivers, if greater than 3-4" of rainfall is realized.**

For more details...See here for the latest [river forecasts](#) and impact catalogs.

Official Forecast – Yantic River at Yantic CT



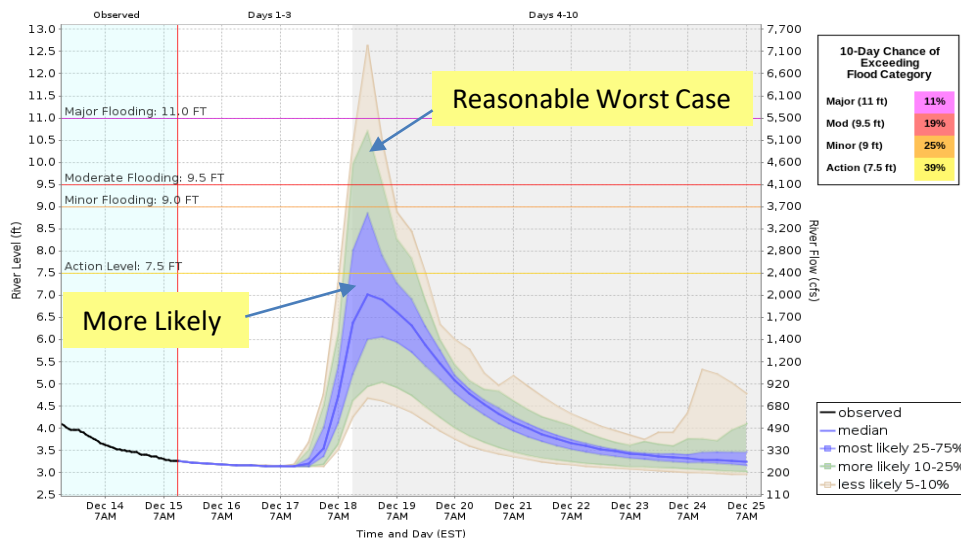
Probabilistic Forecast – Yantic River at Yantic CT

NAEFS - 10 Day River Level Probabilities

Based on North American Ensemble Forecast System Model Simulations
Used to Estimate the Range of Possible River Levels

Dec 15 - Dec 25, 2023

Yantic River at Yantic, CT (YTCC3)

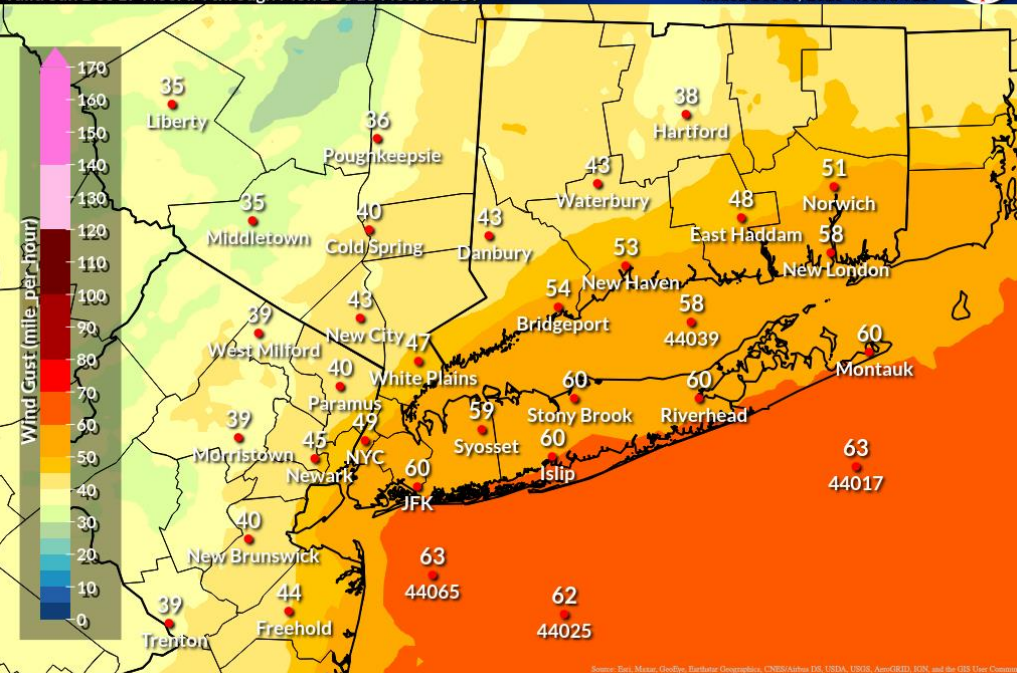


Strong Winds

Sunday's Maximum Wind Gusts

Valid Sun Dec 17 7:00AM through Mon Dec 18 7:00AM EST

Weather Forecast Office
New York, NY
Issued Dec 16, 2023 4:00 AM EST



NWSNewYorkNY

weather.gov/nyc

Hazards and Impacts:

Along coast, including NYC

- ✓ **Peak Winds:** South to southeast winds of 25 to 35 mph with gusts 50 to 60 mph. Highest across Long island and southeastern CT. These strongest winds will likely be for a 3 to 6 hour period overnight Sunday into Monday morning.
- ✓ **Impacts:** Strong winds will blow down scattered tree limbs. A few trees and power lines could be downed. Power outages are possible. Poorly secured outdoor objects will be damaged or blown away.

Across Interior

- ✓ **Peak Winds:** South to southeast winds of 15 to 25 mph with gusts 35 to 50 mph.
- ✓ **Impacts:** Isolated tree damage. Poorly secured outdoor objects will be damaged or blown away.

Timing

- ✓ Sunday evening through Monday morning.

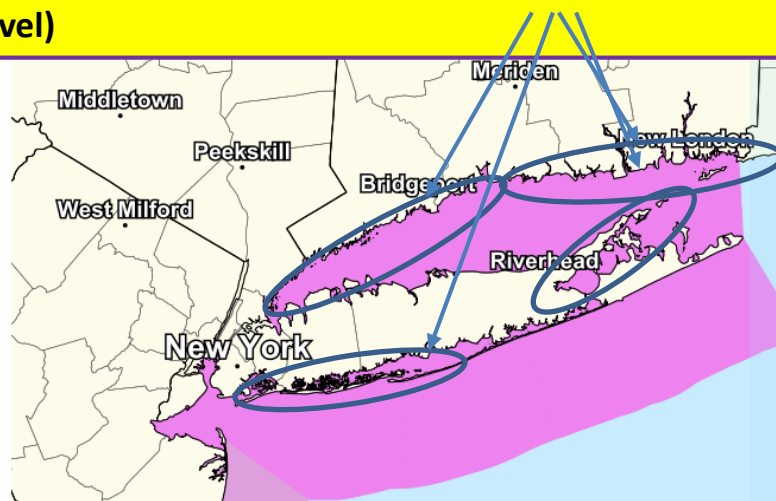
Forecast Challenges:

Exact storm track and intensity will determine magnitude and duration of strongest winds. Farther west solution will result in longer duration of strong winds through Monday morning. More clarity expected in the next 24 hours.

Coastal Flooding Potential

Marine / Coastal Hazards

Threat areas for widespread moderate coastal flooding during Monday morning high tide (2 to 2 1/2 ft above ground level)



For the latest coastal flood forecasts (hydrographs and tables) and the tools to visualize the potential coastal impacts (zoomable potential inundation map, impact catalogs, climatology, etc.) in your area of concern please see to the [NWS New York, NY Coastal Flooding Page](#)

Coastal Flood Hazards and Impacts:

- ✓ Monday afternoon high tide: Widespread moderate (2 to 2 1/2 ft above ground) coastal flooding threat increasing for S Nassau S Queens, SW Suffolk, LI twin forks, and much of coastal CT.
- ✓ **Potential for locally major coastal flooding (3 ft above ground) for these areas if farther west storm track**
- ✓ **Potential Impacts** – Scattered low-lying and shoreline roads could be closed in the affected area, with adjacent properties taking on water. Cars may be damaged if not moved to higher ground. **Flooding impacts could occur well up tidally affected rivers, including the Hudson River and Hackensack River, exacerbated by freshwater runoff.**
- ✓ Sunday Night high tide: Widespread minor (1-2 ft above ground) coastal flooding possible along NY/NJ harbor, Jamaica Bay, Great South Bay, and coastal Westchester and SW CT.

Shoreline Hazards and Impacts:

- ✓ 12-16' breaking waves along the oceanfront, resulting in widespread dune base erosion and scattered overwashes where dune structures have been compromised with Mon early PM high tide.
- ✓ 3 to 5' along coastal CT, and 4 to 8' along Orient Point shoreline resulting in beach erosion, localized overwashes, and possible damage to shoreline structures with Mon early PM high tide.




Timing:

- ✓ Around and near the times of high tide Mon AM

Uncertainty: Timing of strongest wind forcing and highest surge in relation to time of Sun Night/early Mon aft high tide. This will determine potential for localized major flooding.



Coastal Flooding Thresholds

	Minor (CF Advisory)	Moderate (CF Warning)	Major (Warning)
Picture	 Westport	 Lindenhurst	 New Haven
Hazard	<ul style="list-style-type: none"> • Low threat of property damage...and no direct threat to life. • 1 to 2 ft of inundation in shoreline and vulnerable areas. 	<ul style="list-style-type: none"> • Elevated threat of property damage...with a risk to life if one places themselves in unnecessary danger. • 2 to 3 ft of inundation in shoreline and vulnerable areas. • Minor to no inundation of surrounding coastal communities. 	<ul style="list-style-type: none"> • Significant threat to life and property. • 3-5+ ft of inundation in shoreline and other vulnerable areas. • Minor to moderate inundation (1 to 3 ft) of surrounding coastal communities that rarely experience coastal flooding.
Impact	<ul style="list-style-type: none"> • A few shoreline and vulnerable roadways and adjacent properties will experience shallow flooding. 	<ul style="list-style-type: none"> • Several shoreline and vulnerable area home and businesses will experience water inside. • Several low-lying coastal and shoreline roads will be closed. • A few cars may take on water or even be destroyed. 	<ul style="list-style-type: none"> • Evacuations will be necessary for the most vulnerable shoreline and coastal areas. • Many coastal communities will experience damage...with some shoreline and flood prone homes and businesses being destroyed. • Many cars will likely be submerged or washed away. • Several sections of nearshore roads and escape routes will be impassable and a few could be washed out. • Flood waters may extend well inland in low lying areas.



Event Summary

- ✓ Widespread 2 to 3" of rainfall likely late Sunday into Monday. Widespread minor urban, poor drainage and riverine flood threat likely for late Sunday thru Monday morning, with isolated flash flood threat.
- ✓ Threat for moderate flooding of quick responding rivers remains. Low threat for major flooding if high end of rainfall amounts are realized.
- ✓ Southerly winds 25 to 35 mph with gusts 50 to 60 mph likely for the coast Sunday Night into Monday, causing scattered tree and power line impacts.
- ✓ Threat for widespread moderate coastal flooding (2 to 2 ½ ft inundation above ground) remains for vulnerable coastal communities for the Monday afternoon high tide. Locally major (around 3 ft inundation above ground) is possible. Scattered overwashes possible for the ocean beachfront.
- ✓ Storm conditions likely on all waters Sunday Night through Monday